

REMARKS

Reconsideration and allowance of the subject application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1-30 remain pending in the application.

The drawings stand objected to because Box 740 remains unidentified in Figure 7. In response, a replacement drawing is attached to this Amendment. Accordingly, this objection should be withdrawn.

Claims 21-30 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. In response, claim 21 has been amended and is believed now to comply with Section 112, first paragraph. Accordingly, this rejection should be withdrawn.

Claims 1-30 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Applicants respectfully traverse this rejection.

The entire application is directed to the use of assistance signals. The GPS receiver may be obstructed by trees, bridges, garages and when the receiver is in a building. Obviously, the GPS system can only use assistance signals when the receiver is in a building. The position computation block 815 takes its input Ephemeris data derived from the navigation message decoded in block 814, or data from the aiding SPS receiver 812 or the stored message in memory 816. Additionally, it may use differential corrections from aiding SPS receiver 812 and pseudoranges from the pseudorange ambiguity resolution module 810 (page 21, lines 8-12). Inadequate is known to those skilled in the art. Inadequate means that the GPS receiver cannot receive signals due to inadequate SNR. In other words, the GPS receiver is only receiving the assistance signal. Accordingly, this rejection should be withdrawn.

Claims 1-6, 9, 11-16, 19, 21-26 and 29 are rejected as 35 U.S.C. § 102 (b) as being anticipated by Taylor et al. Applicants respectfully traverse this rejection.

As discussed above with respect to the Section 112, first paragraph, written description rejection, the specification does provide support using only the assistance signal. Applicants submit that the present invention is patentably distinct from Taylor et al. because Taylor et al. does not teach, describe or suggest every element of the claimed invention. The receiver of the

present invention can operate, when the received satellite signals have inadequate SNR, by using only the assistance signal data. During the operation of the positioning system in the present invention, the receiver receives the signals transmitted from the orbiting satellites and the assistance signal transmitted from the broadcast station. If the received satellite signals have inadequate SNR, the receiver will utilize only the data from the assistance signal. By contrast, the system in Taylor et al. is designed such that the user receivers always use both the GPS satellite signal data as well as the aiding signal data. At column 7, lines 5-17, Taylor et al. states: "As shown in Figure 4, the complete aiding signal on the 1,555 MHz carrier, together with the GPS satellite signals on the 1,575.42 MHz channel, are received at the user terminal receiver [30] by a single antenna [33].... Both signals are passed through a bandpass filter [35] before being amplified in common wide-band RF preamplifier [34] having a bandwidth and gain sufficiently large to amplify both the GPS spread spectrum signal and the FSK reference signal." Thus, it is evident from Figure 4 that the user terminal receivers of Taylor et al. always receive and use both the satellite GPS spread spectrum signals and the aiding FSK reference signal.

Therefore, since the system of Taylor et al. cannot at any time operate by using only the aiding signal data, Taylor et al. does not anticipate the claimed invention. Accordingly, the anticipation rejection should be withdrawn.

Claims 1-7, 9-17, 19-27 and 29-30 are rejected under 35 U.S.C. § 102 (b) as being anticipated by Krasner. Applicants respectfully traverse this rejection.

As discussed above with respect to the Section 112, first paragraph, written description rejection, the specification does provide support using only the assistance signal. Applicants submit that the present invention is patentably distinct from Krasner because Krasner does not teach, describe or suggest every element of the claimed invention. For example, among other things, the system of Krasner lacks the receiver of the present invention. As described above, the receiver of the present invention can operate when the received satellite signals have inadequate SNR, by using only the assistance signal data. Conversely, the remote unit receivers of Krasner are designed to always require the use of the GPS satellite signal data transmitted from the in view satellites. Column 3, lines 17-26 of Krasner states: "...the present invention provides a method for determining the position of a remote GPS receiver by transmitting GPS satellite information, including satellite almanac data to the remote unit or mobile GPS unit from a base station via a data communication link. The satellite almanac data is then used to determine

Doppler data for satellites in view of the remote unit. The remote unit uses this Doppler data and received GPS signals from in view satellites to subsequently compute pseudoranges to the satellites.” Thus, to operate by successfully computing its pseudoranges, the remote unit receivers of Krasner always requires the use of GPS signal data transmitted from in view satellites in conjunction with Doppler data which is derived from the satellite almanac data transmitted via the base station. However, it should be noted that in instances when conditions of poor reception are present, the receiver of Krasner does not allow for the substituted use of buffered data from previously received GPS satellite signals. Krasner states at column 8, lines 39-50: “...the digital snapshot memory [46] captures a record corresponding to a relatively long period of time. The efficient processing of this large block of data using fast convolution method contributes to the ability of the present invention to process signals at low received levels (e.g., when reception is poor due to a partial blockage from buildings, trees, etc.). All pseudoranges for visible GPS satellites are computed using this same buffered data. This provides improved performance relative to continuous tracking GPS receivers in situations (such as urban blockage conditions) in which the signal amplitude is rapidly changing.” Thus, unlike the receivers in the present invention, the receivers of Krasner, in instances of poor reception, will rely on GPS satellite signals buffered data in order to complete their calculations. Whereas, the receivers in the present invention, when the satellite signals have inadequate SNR because of poor reception, will solely use data from the assistance signal transmitted from the broadcast station. Hence, it is apparent that the receivers of Krasner, even though they will use GPS satellite signal buffered data in certain instances, always require the use of the GPS satellite signals.

Therefore, since the receivers of Krasner cannot operate by solely relying on the data from the aiding signal, Krasner does not anticipate the claimed invention. Accordingly, the anticipation rejection should be withdrawn.

Claims 7, 8, 17, 18, 27 and 28 rejected under 35 U.S.C. § 103 (a) as being unpatentable over either one of Krasner or Taylor et al. in view of Richton et al. Applicants respectfully traverse this rejection

Richton et al. does not overcome the deficiencies discussed above with respect to Krasner and Taylor et al. Claims 7, 8, 17, 18, 27 and 28 recite additional, important limitations and should be patentable over this combination of references for the reasons discussed above with respect to the independent claims as well as on their own merits.

Reconsideration and allowance of the foregoing amendments and the following remarks is respectfully requested.

All objections and rejections having been addressed, it is respectfully submitted that the present application should be in condition for allowance and a Notice to that effect is earnestly solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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A handwritten signature in black ink, reading "Kenneth M. Berner". The signature is written in a cursive, flowing style.

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